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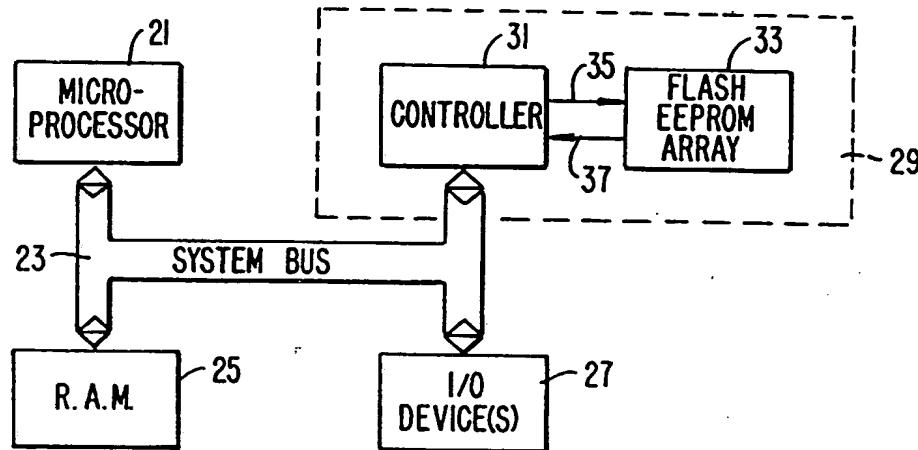


FIG._ 1A

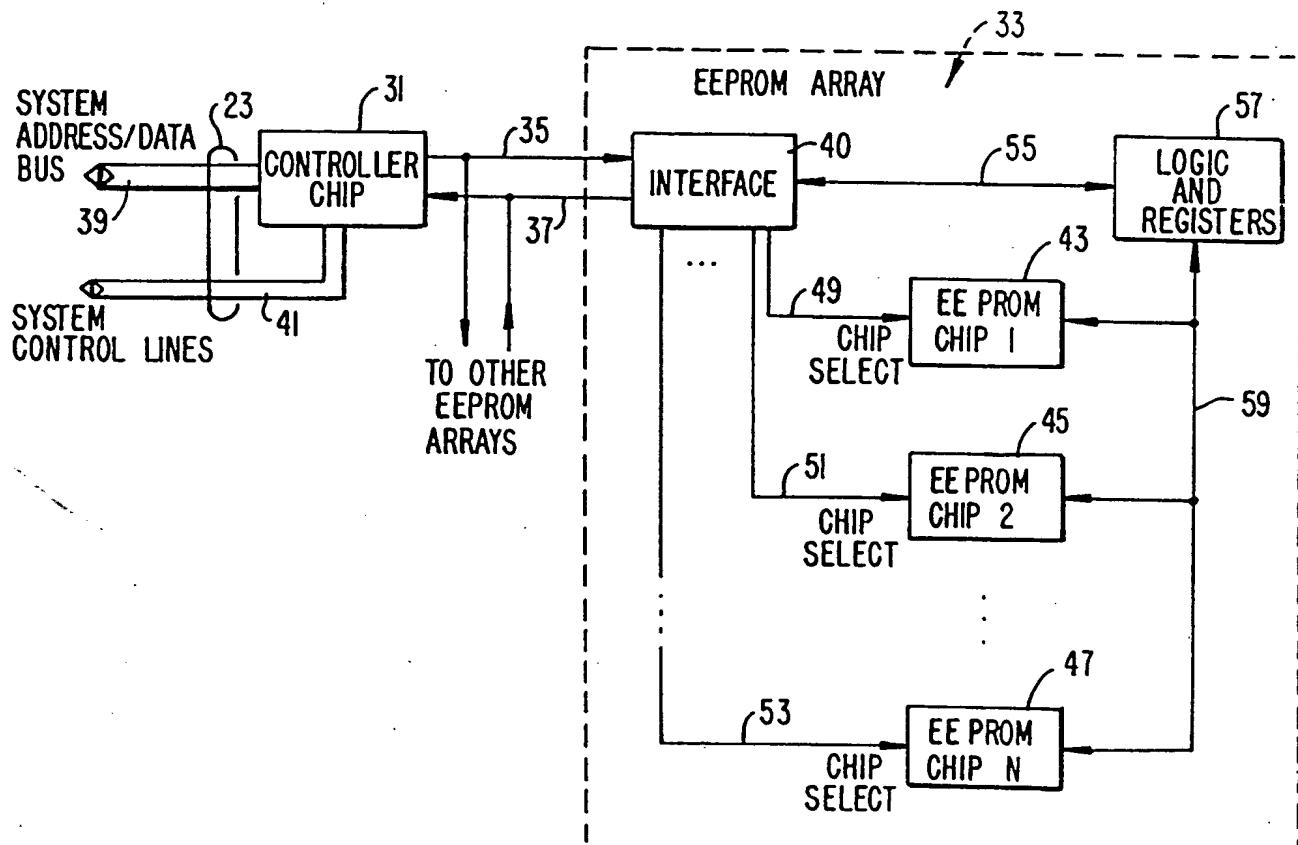


FIG._ 1B

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

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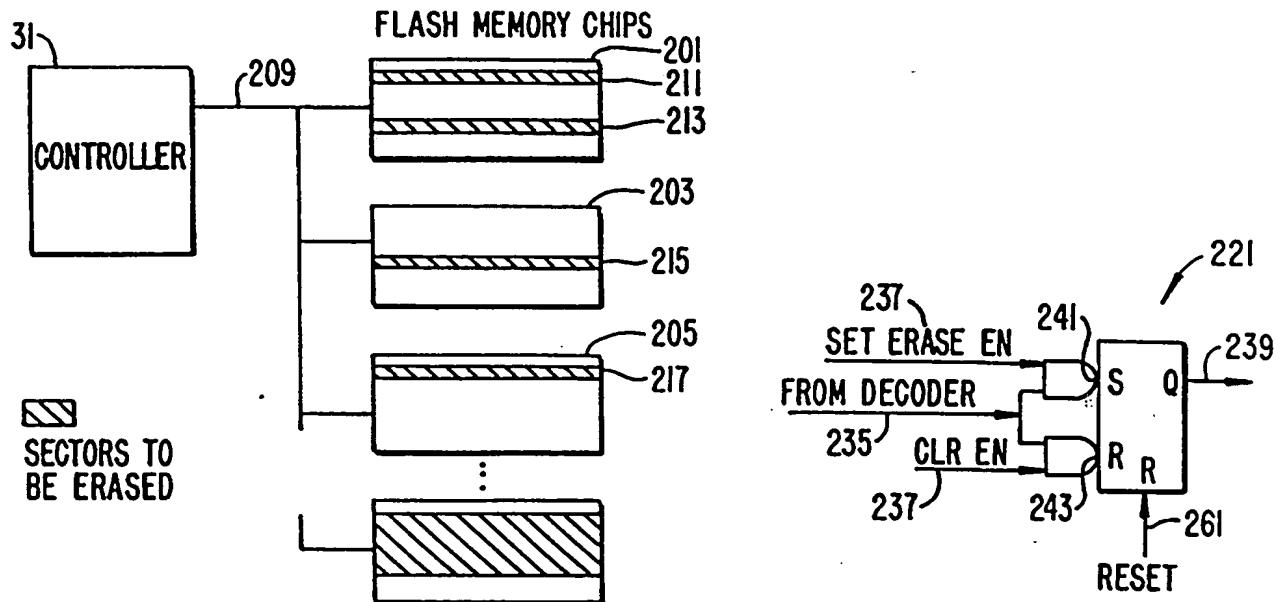


FIG._2

FIG._3B

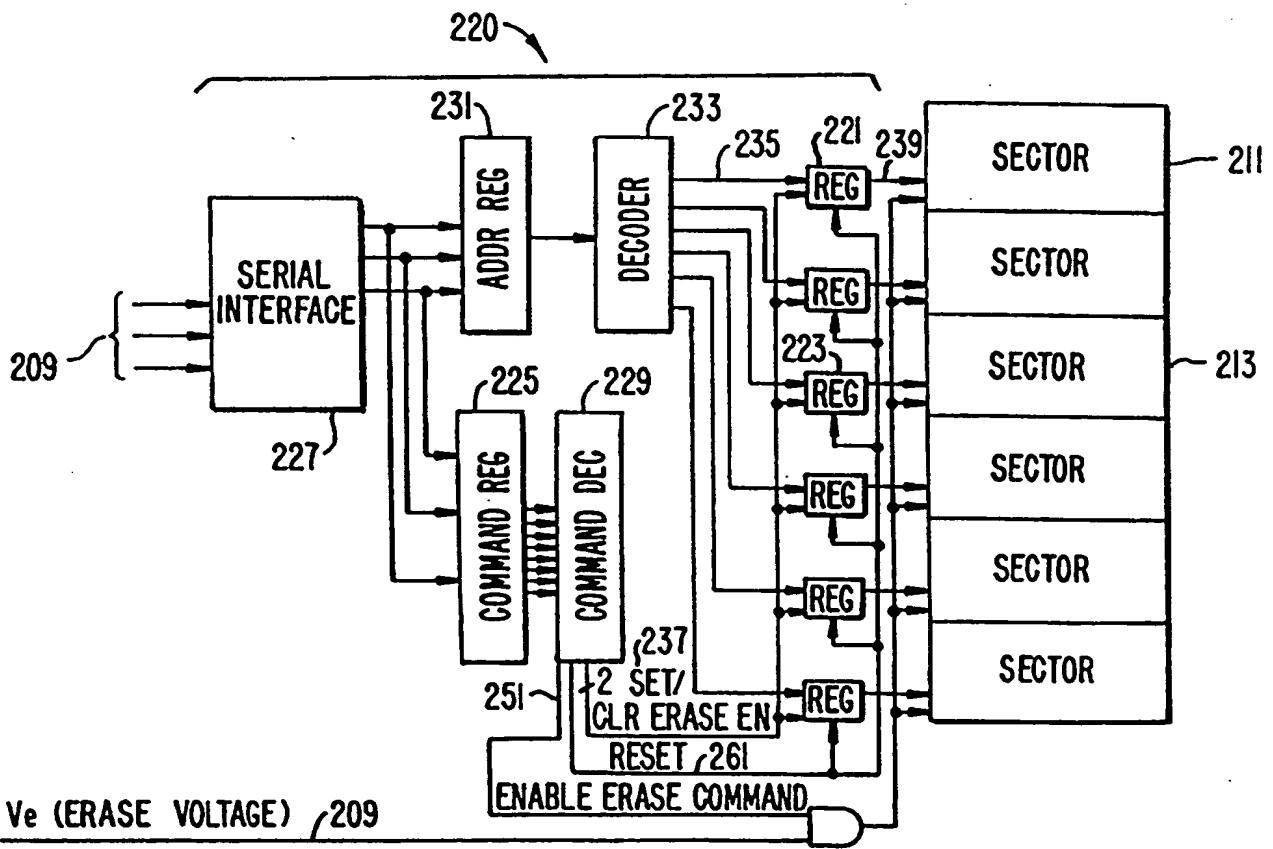


FIG._3A

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

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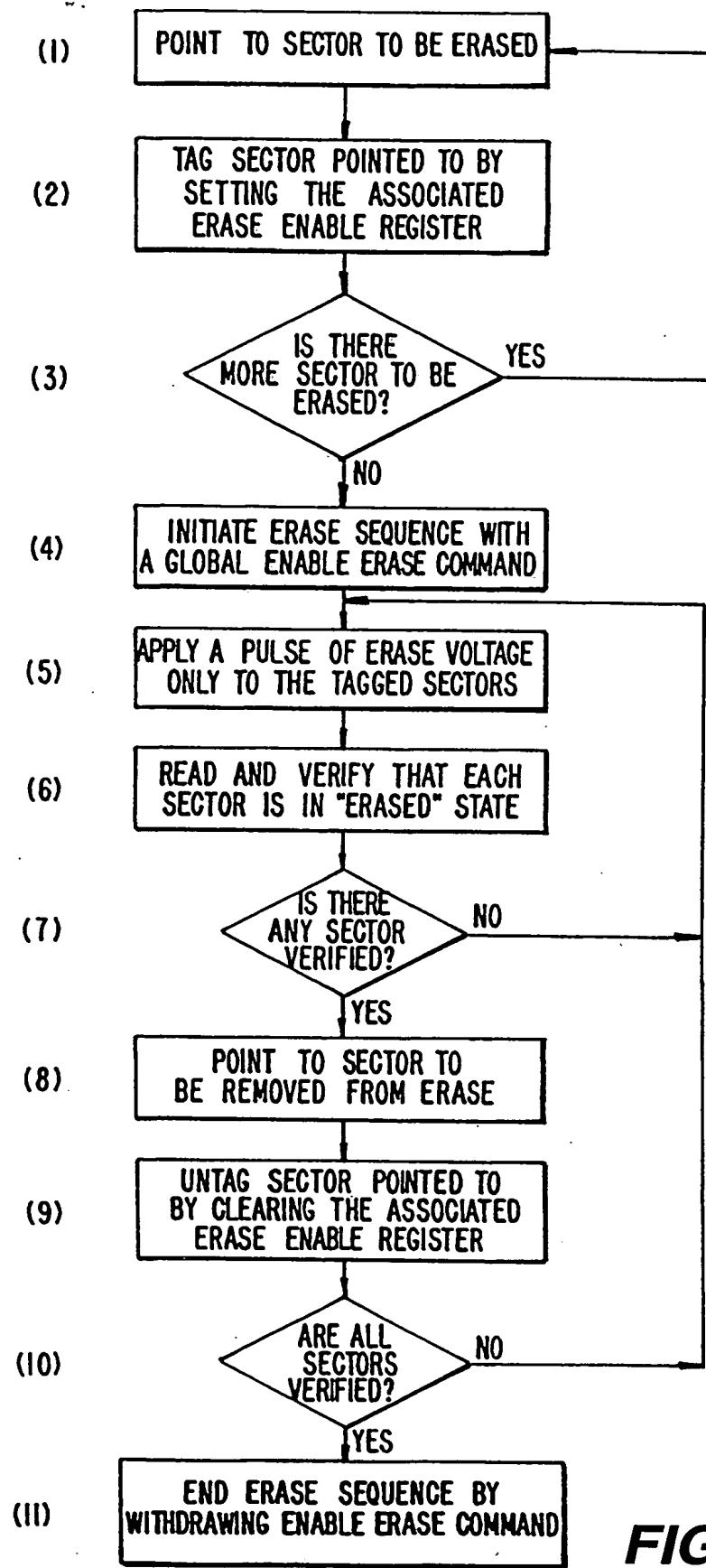
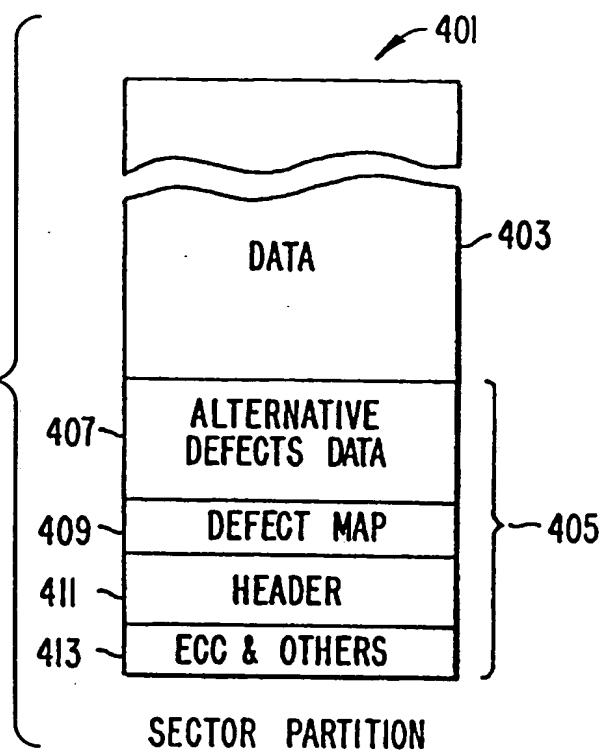


FIG._4

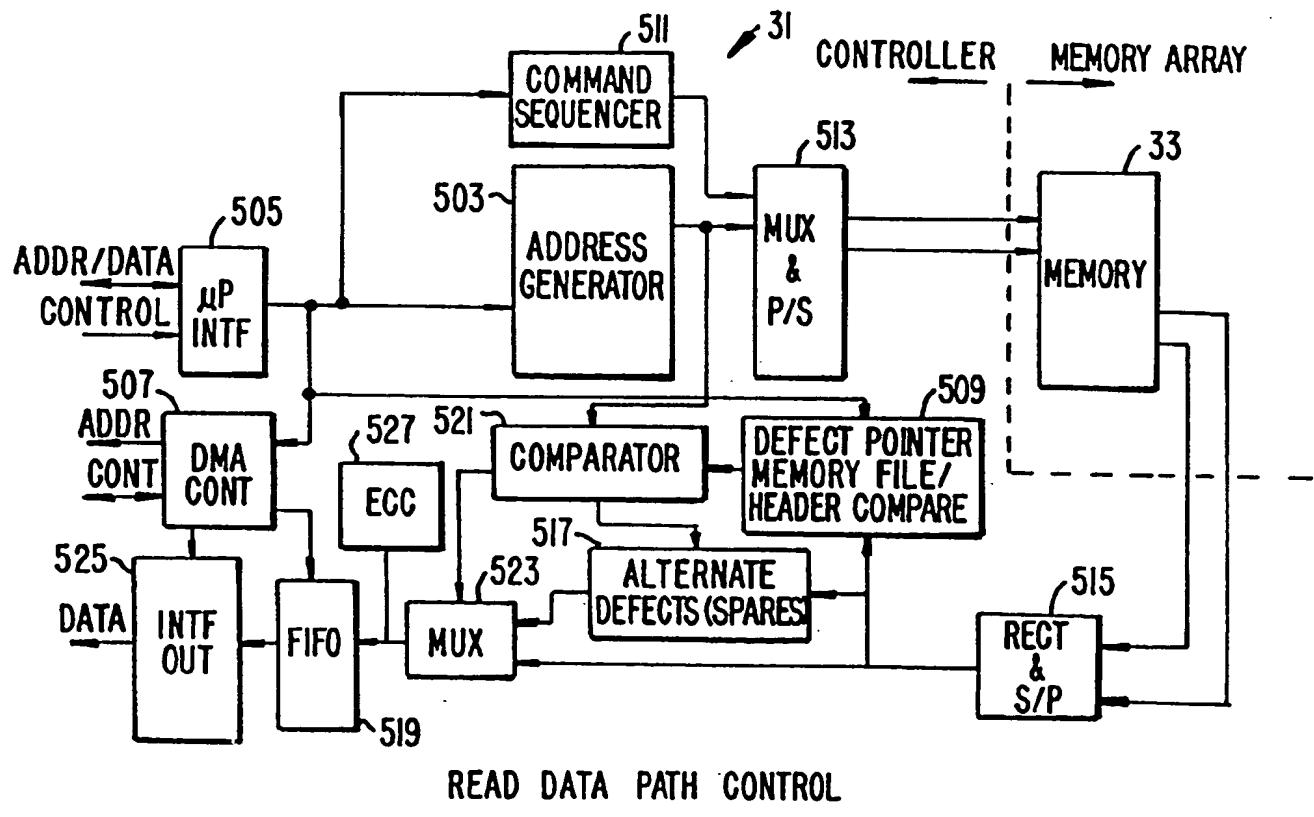
APPROVED BY DRAFTSMAN	O.G. FIG. CLASS	SUBCLASS
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FIG._5



SECTOR PARTITION

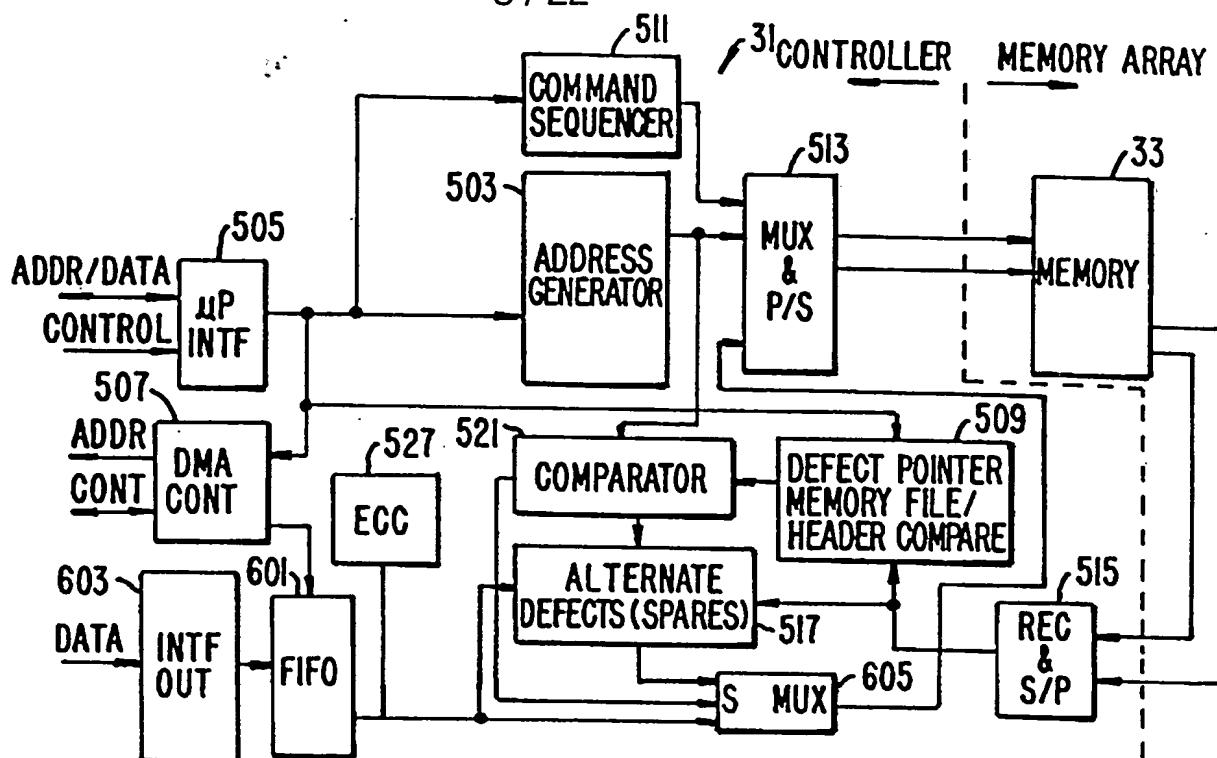


READ DATA PATH CONTROL

FIG._6

APPROVED BY DRAFTSMAN	O.G. FIG.
	CLASS SUBCLASS

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WRITE DATA PATH CONTROL

FIG._7

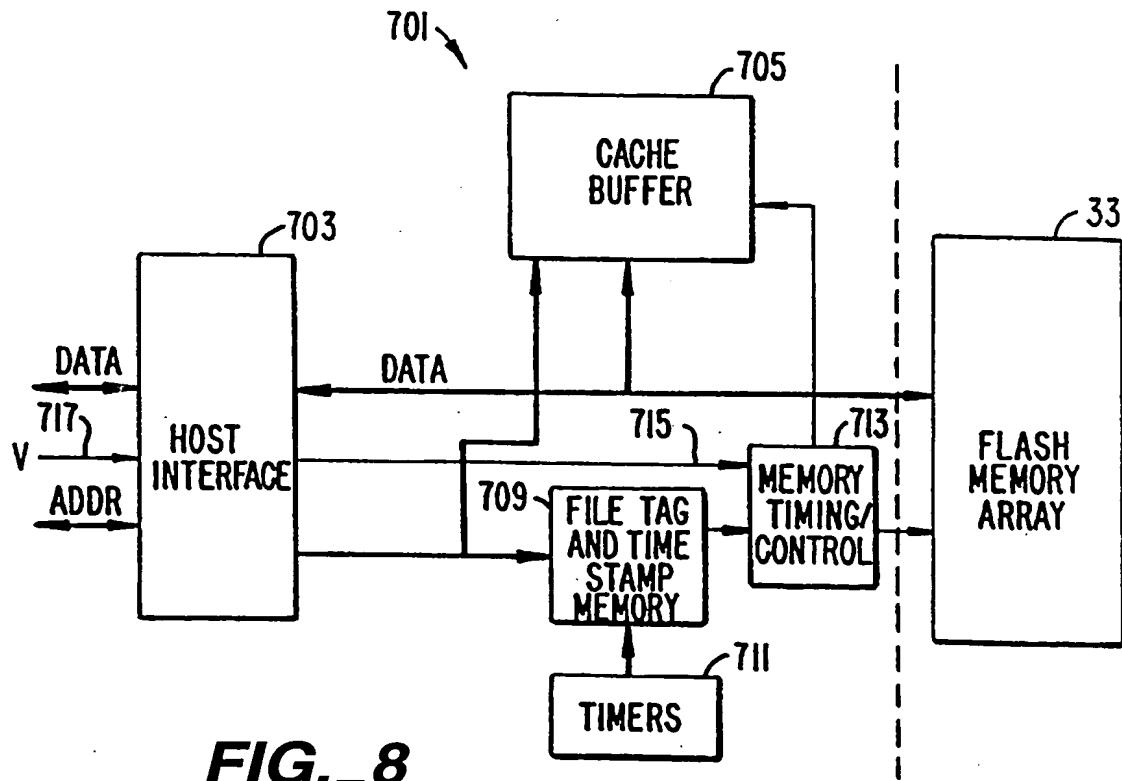


FIG._8

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

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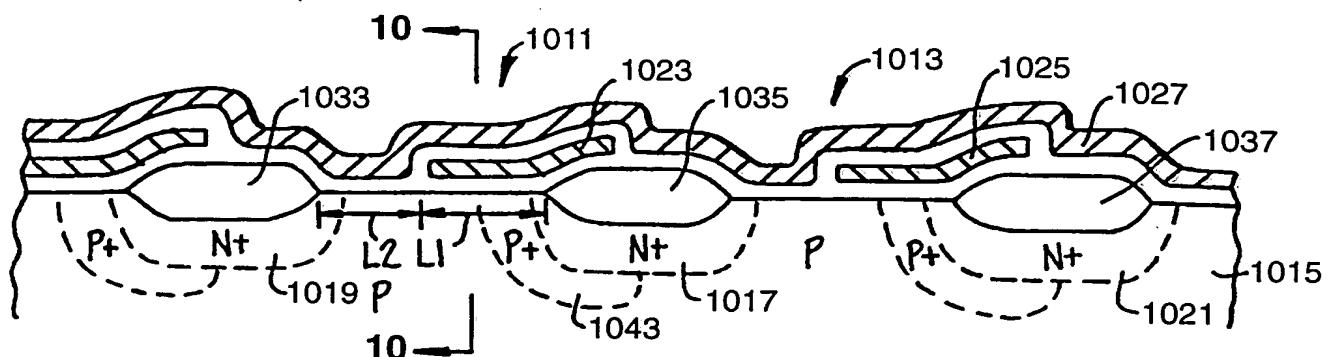


FIG. 9

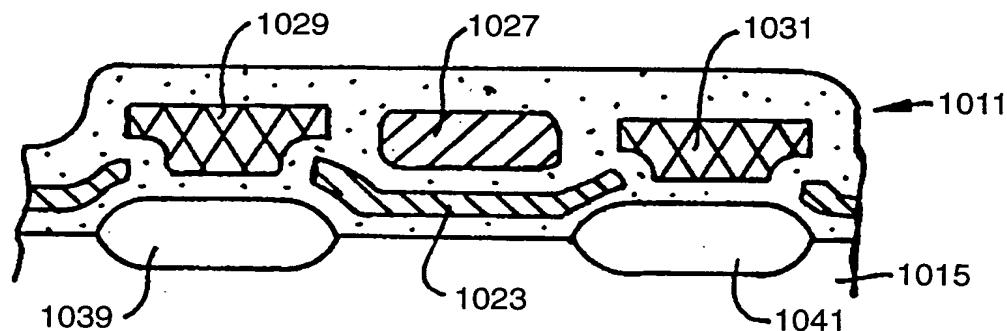


FIG. 10

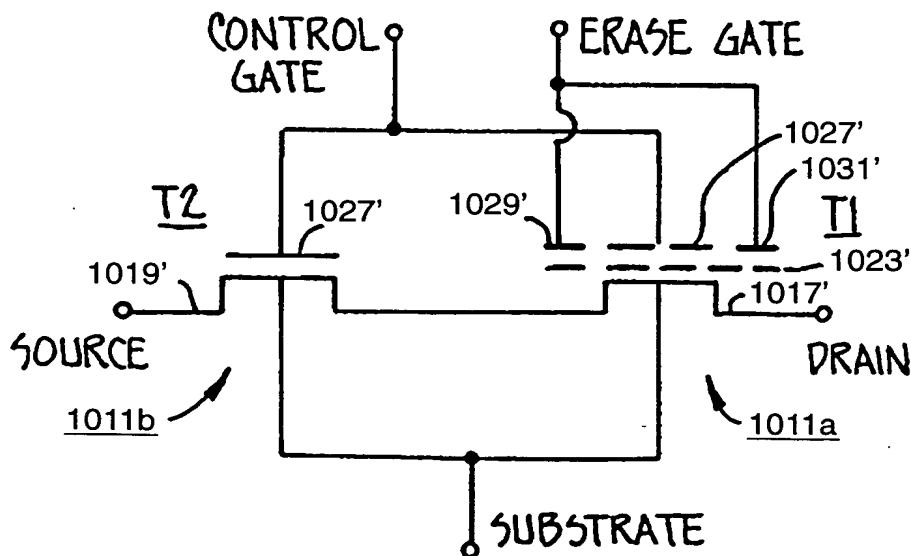


FIG. 11

APPROVED	O.G. FIG.
BY	CLAS
DRAFTSMAN	SUBCLAS

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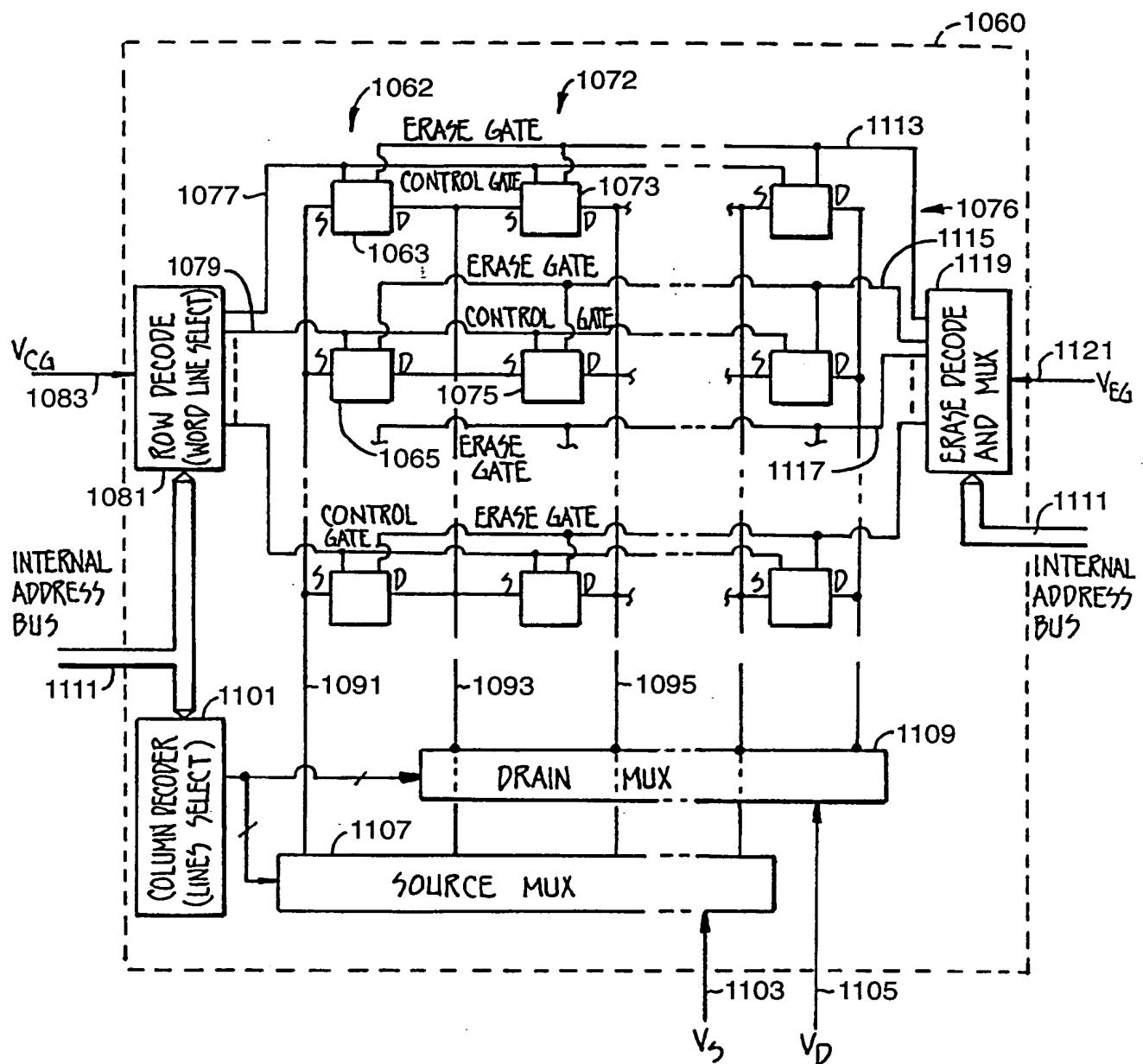


FIG. 12

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

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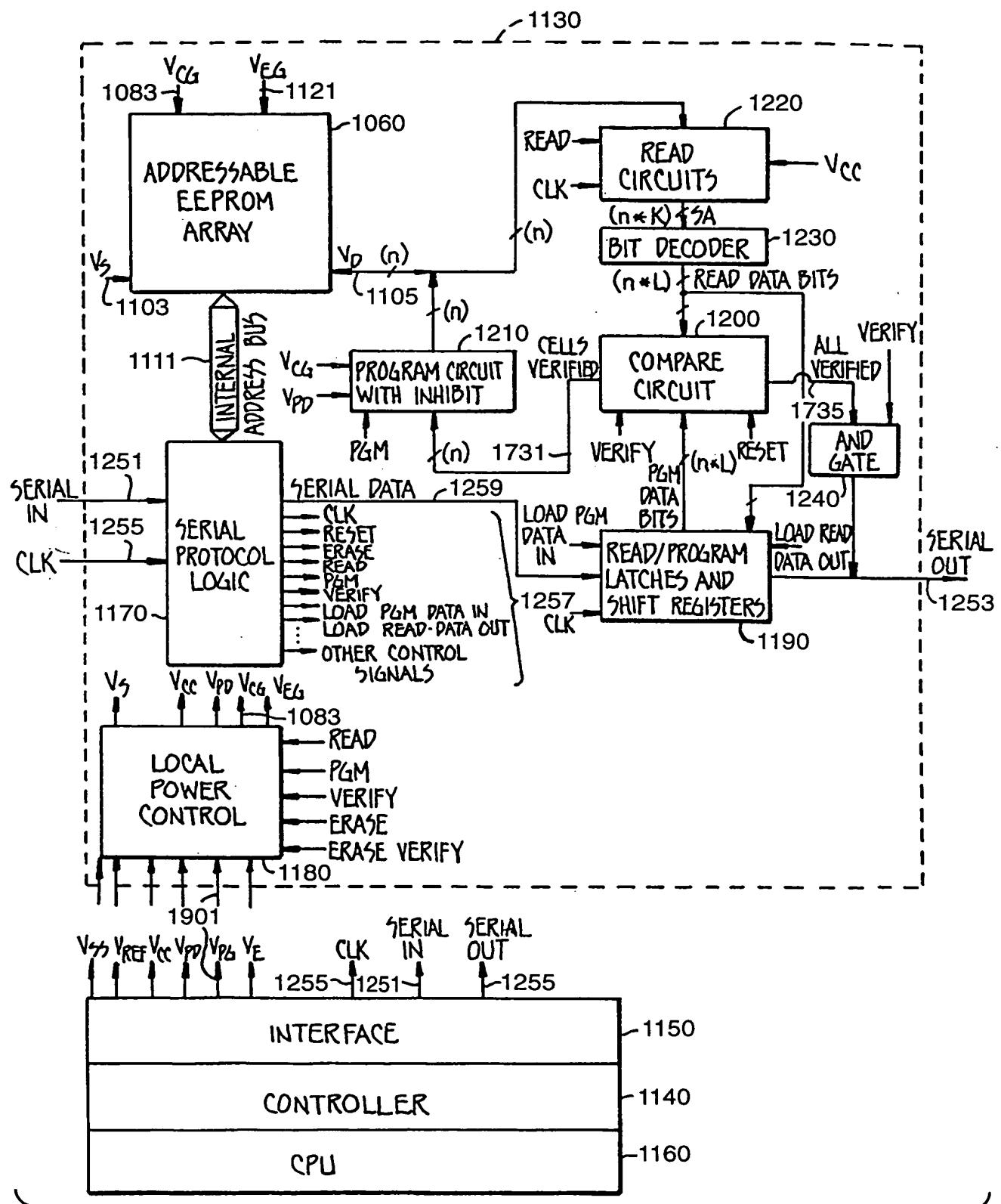


FIG. 13

APPROVED BY	O.G. FIG.
DRAFTSMAN	CLASS SUBCLASS

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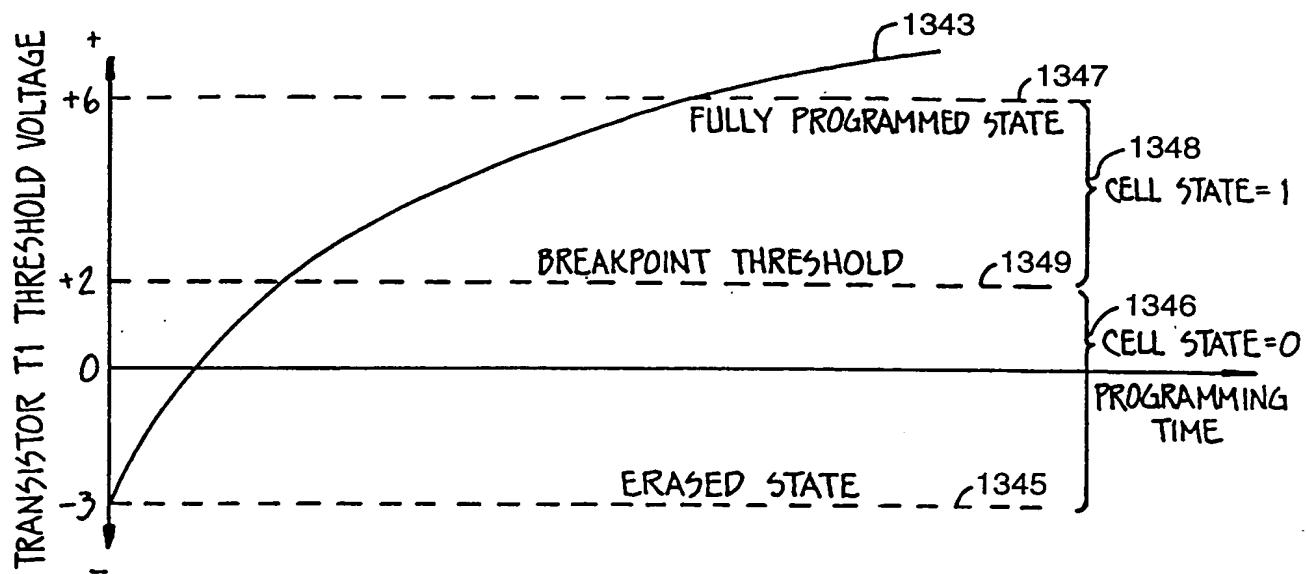


FIG._ 14

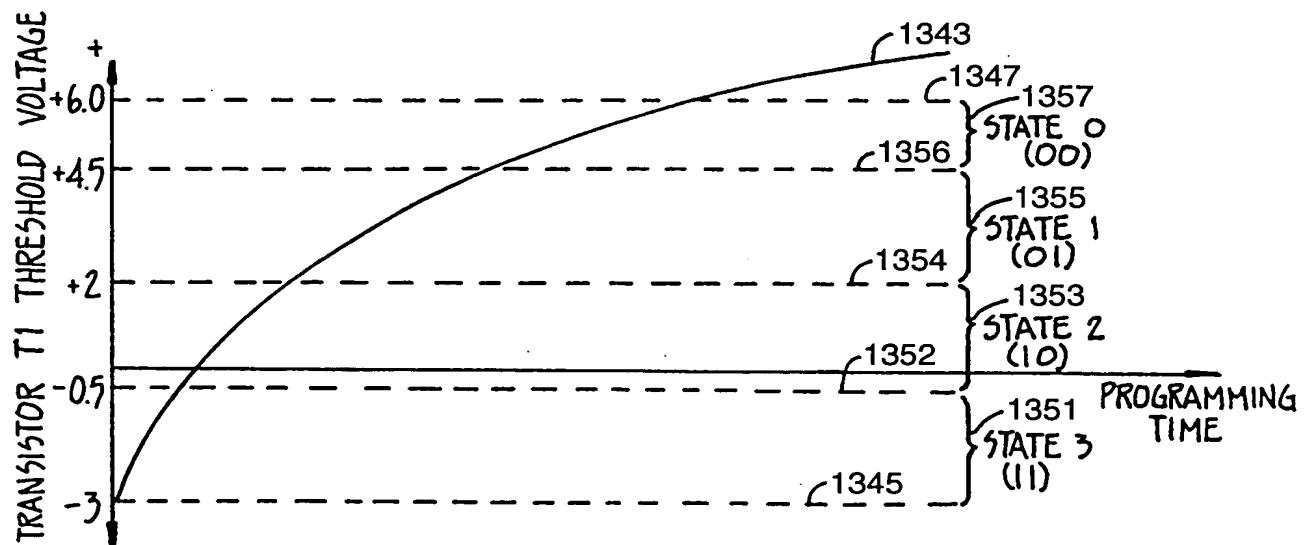


FIG._ 15A

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

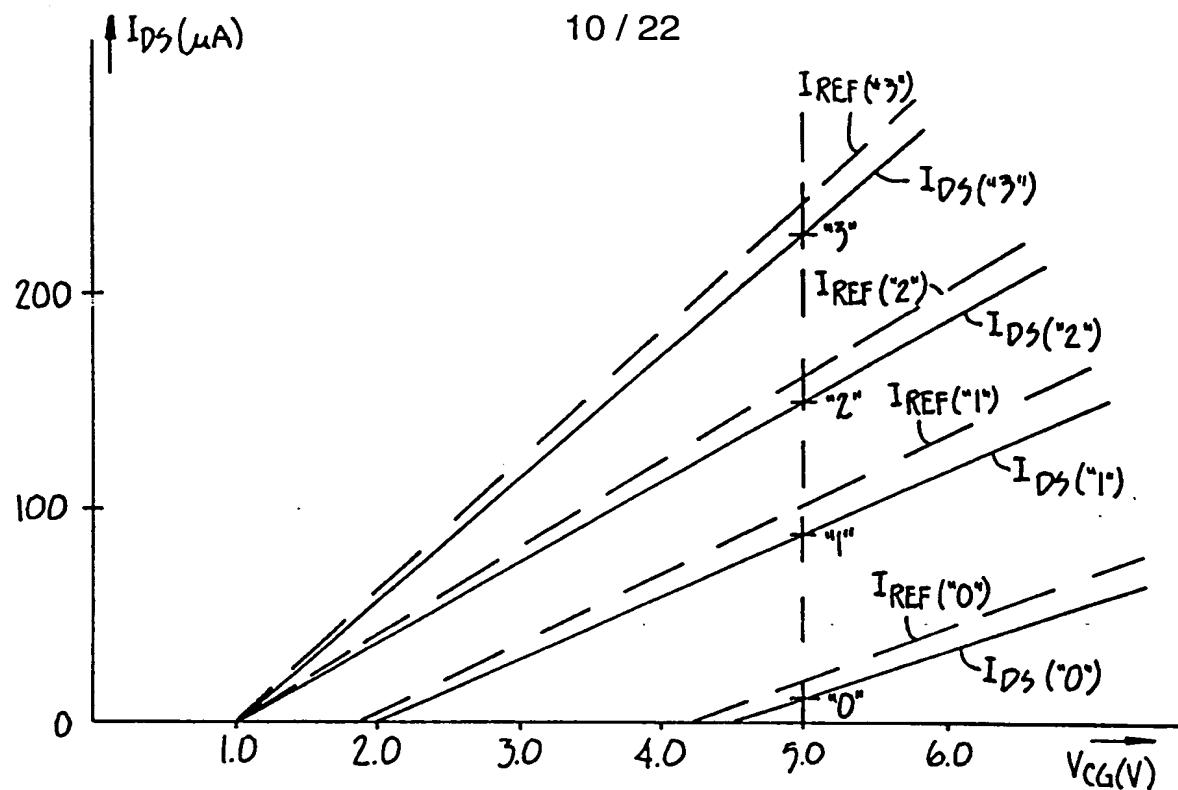


FIG._ 15B

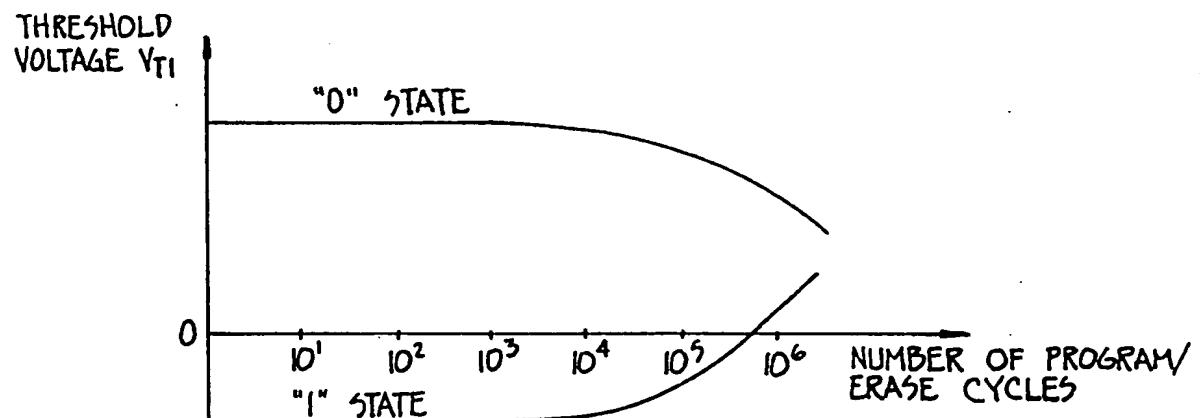


FIG._ 16A

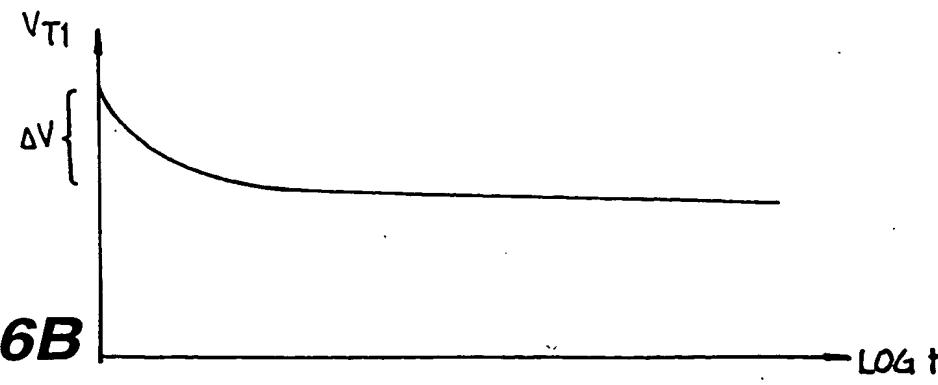


FIG._ 16B

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

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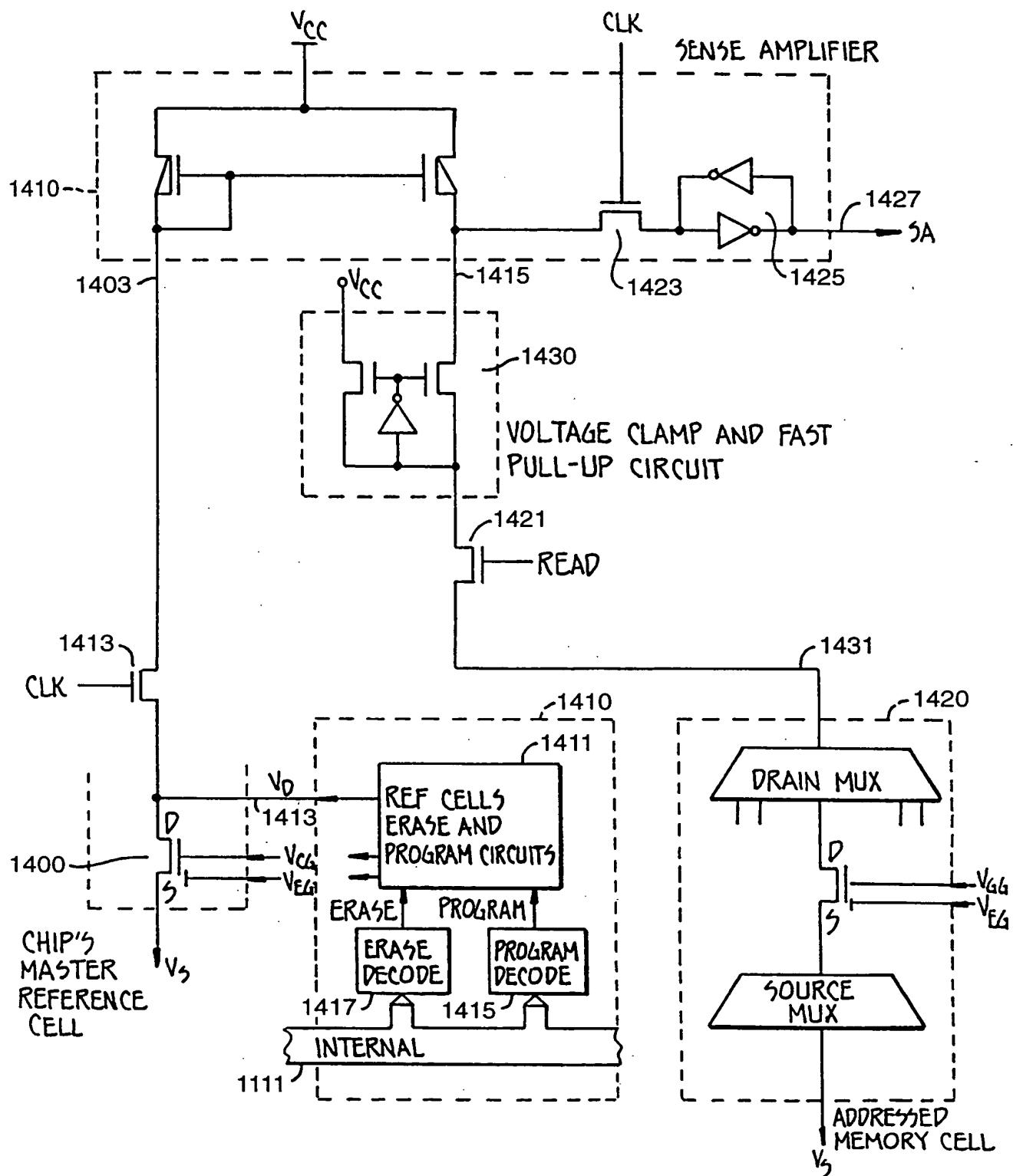


FIG._17A

APPROVED BY DRAFTSMAN	O.G. FIG. CLAS	SUBCLASS
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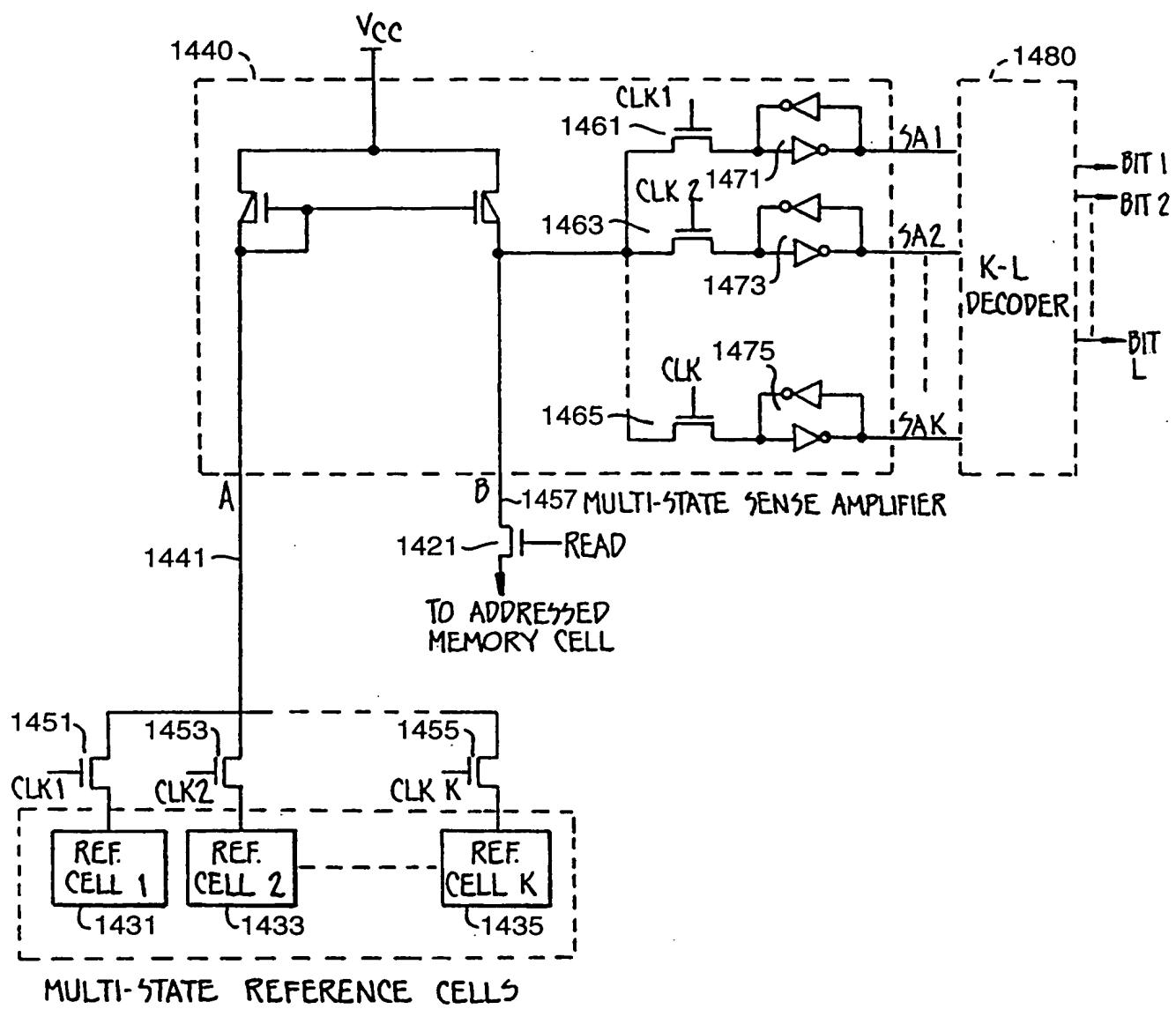


FIG._17B

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

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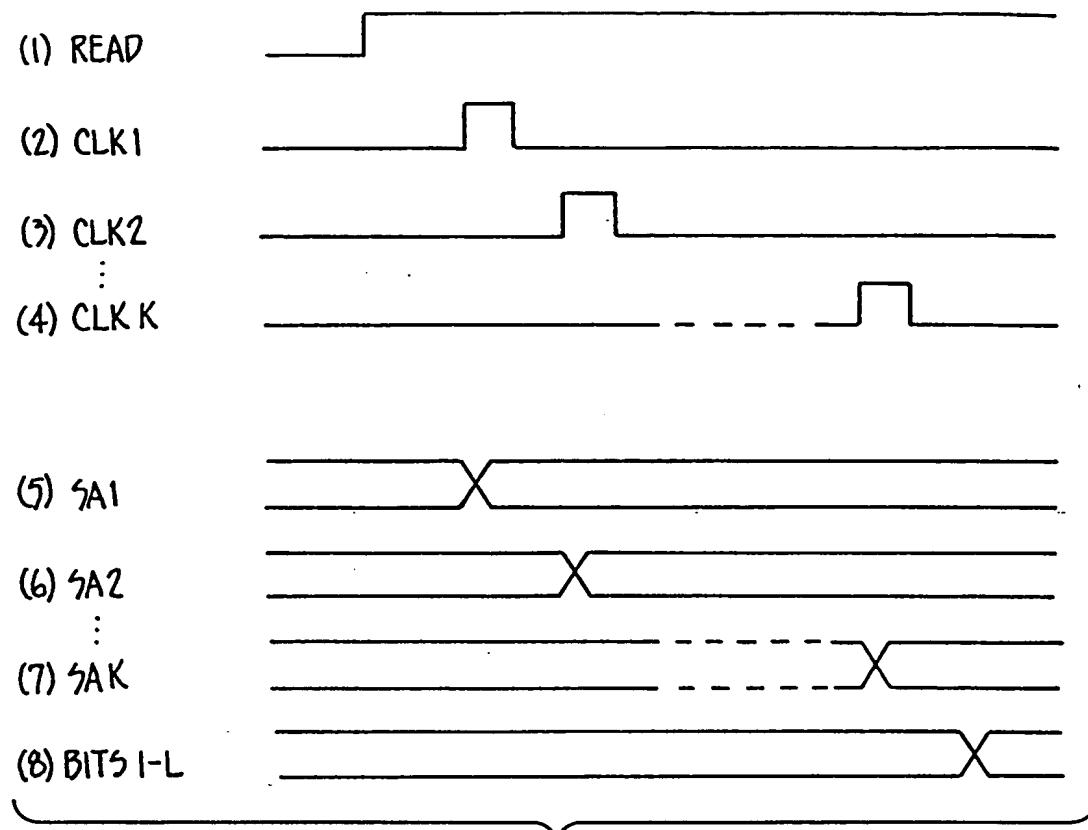


FIG. 17C

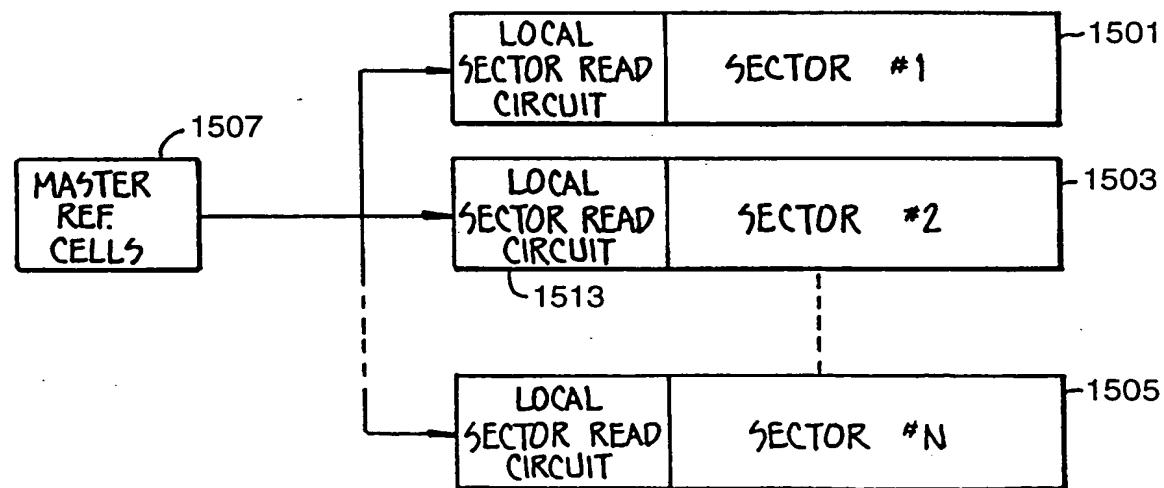


FIG. 18

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

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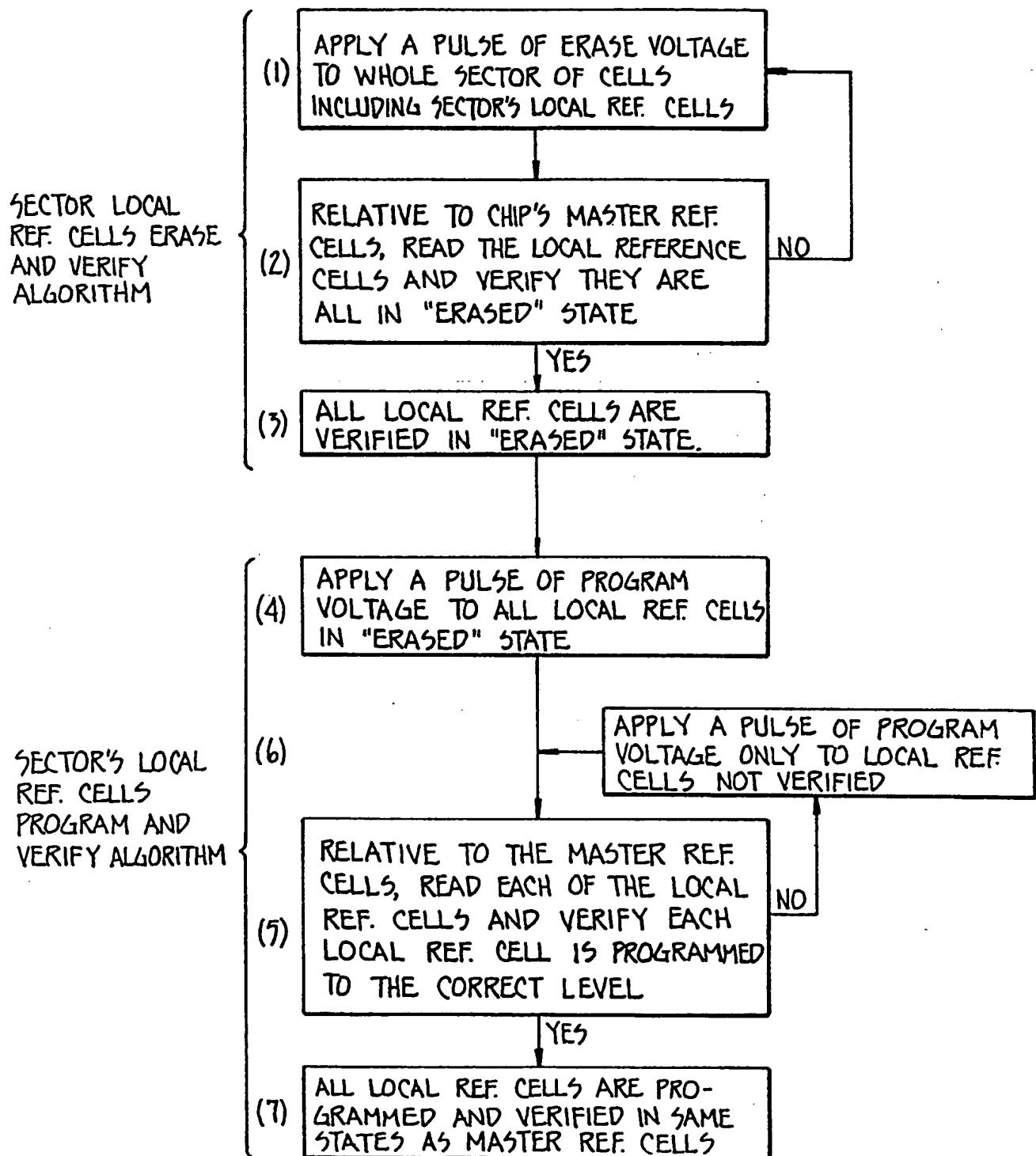


FIG._19

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

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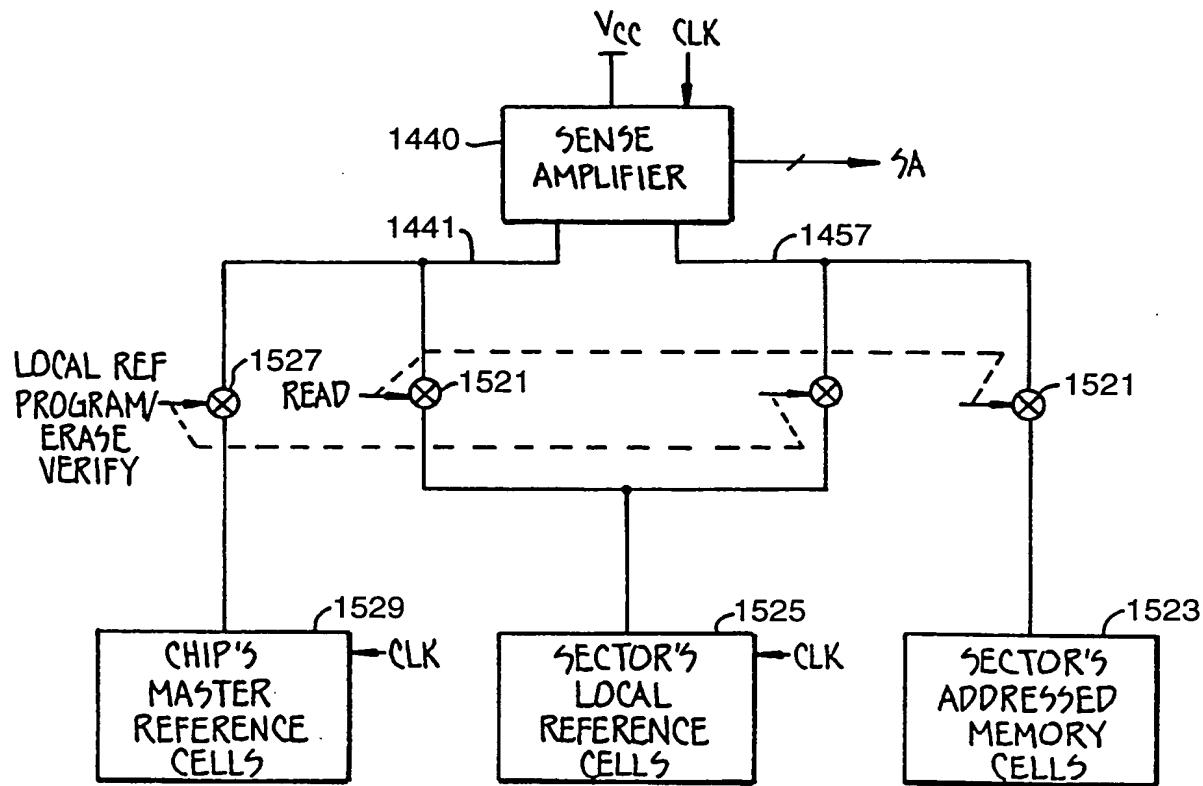


FIG._20A

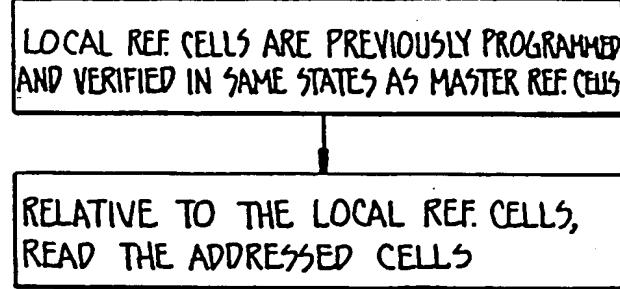
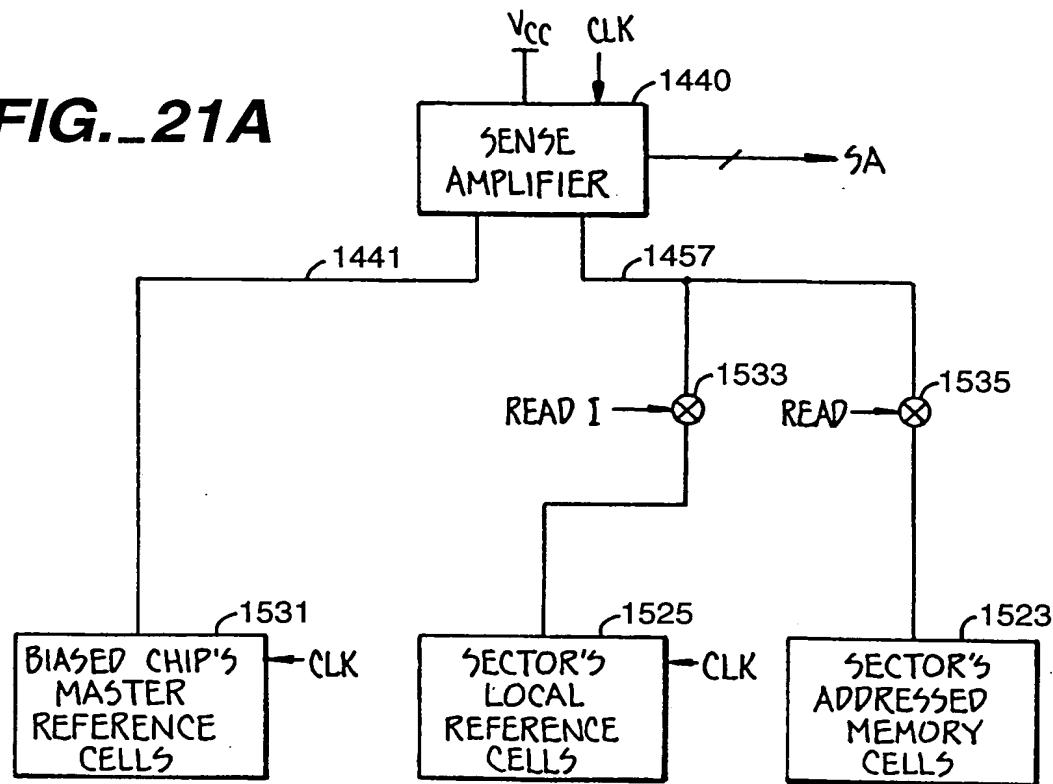


FIG._20B

APPROVED BY DRAFTSMAN	O.G. FIG. CLASS	SUBCLASS
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FIG._21A



- (1) LOCAL REF. CELLS ARE PREVIOUSLY PROGRAMMED AND VERIFIED IN SAME STATES AS MASTER REF. CELLS
- (2) RELATIVE TO THE LOCAL REFERENCE CELLS READ THE MASTER REF. CELLS
- (3) DETERMINE THE DIFFERENCES, IF ANY AND BIAS. THE MASTER REF CELLS' CURRENTS SUCH THAT THE SAME READING IS OBTAINED RELATIVE TO THE BIASED MASTER REF. CELLS AS RELATIVE TO THE LOCAL REF. CELLS
- (4) RELATIVE TO THE BIASED MASTER REF. CELLS, READ THE ADDRESSED CELLS

FIG._21D

+

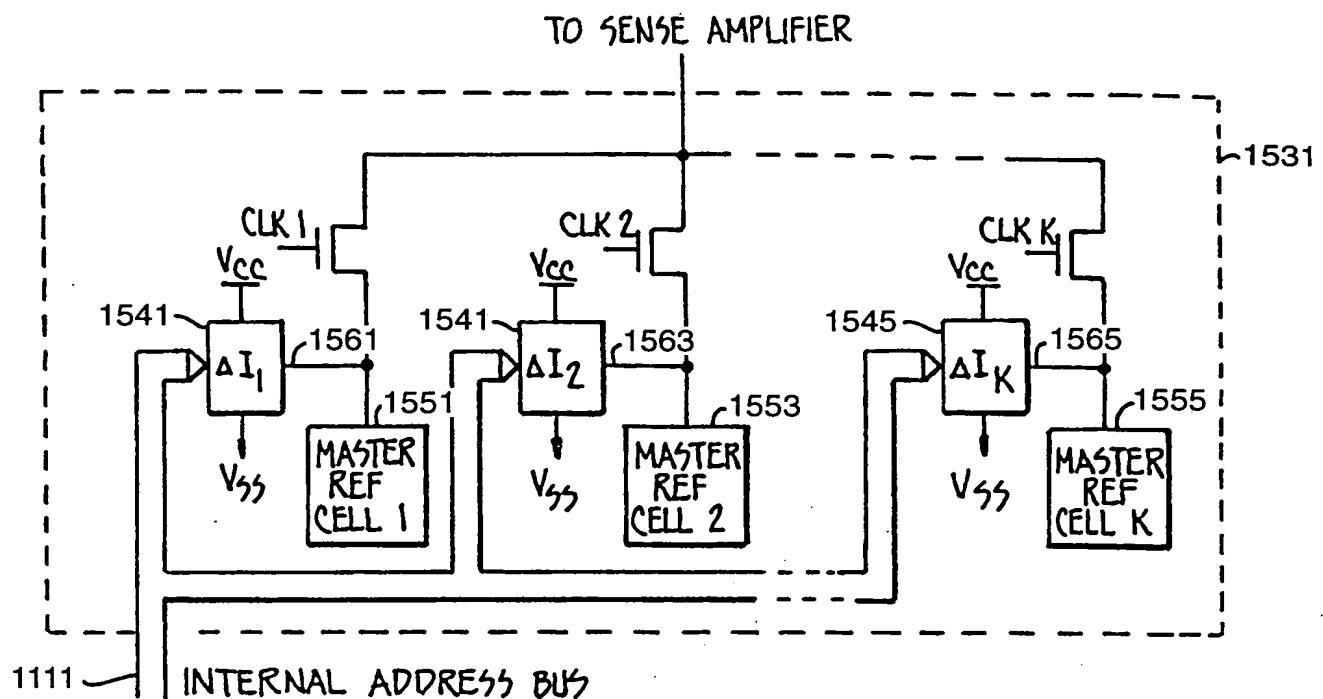


FIG._21B

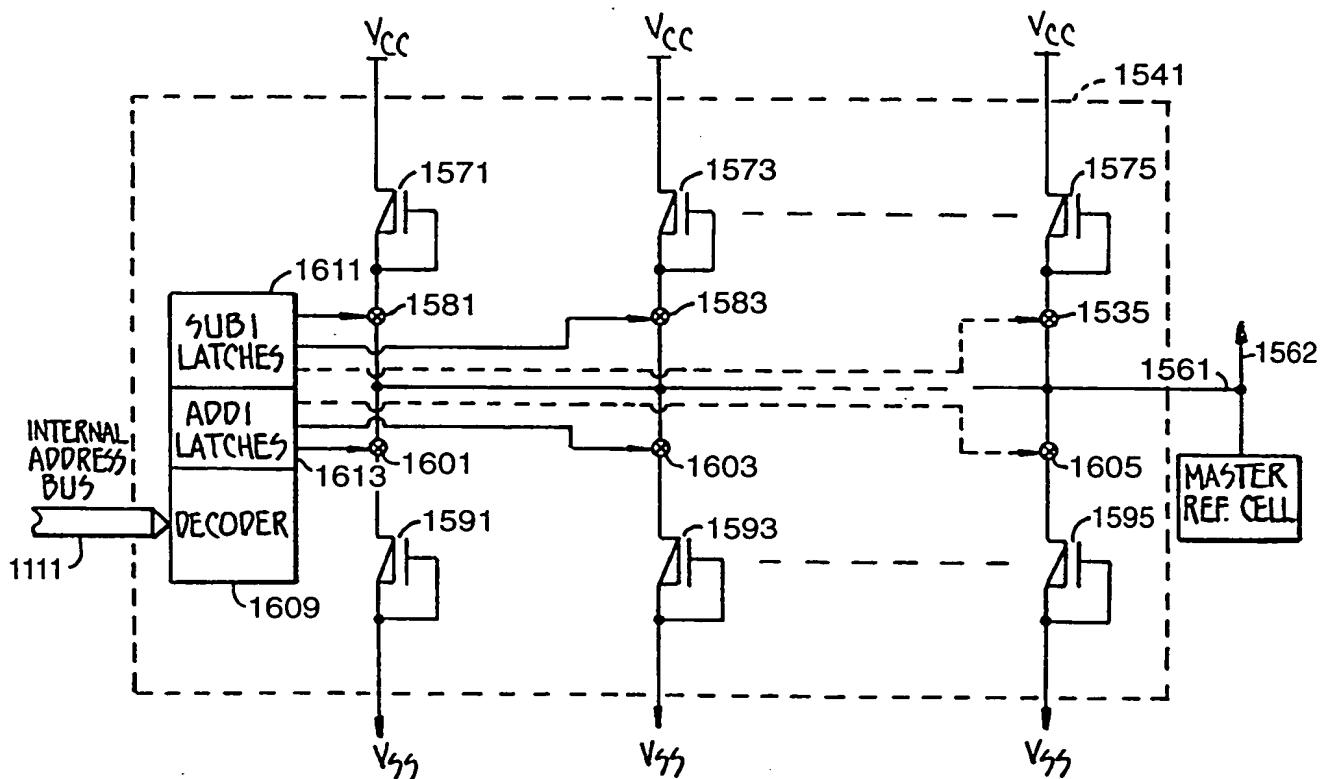
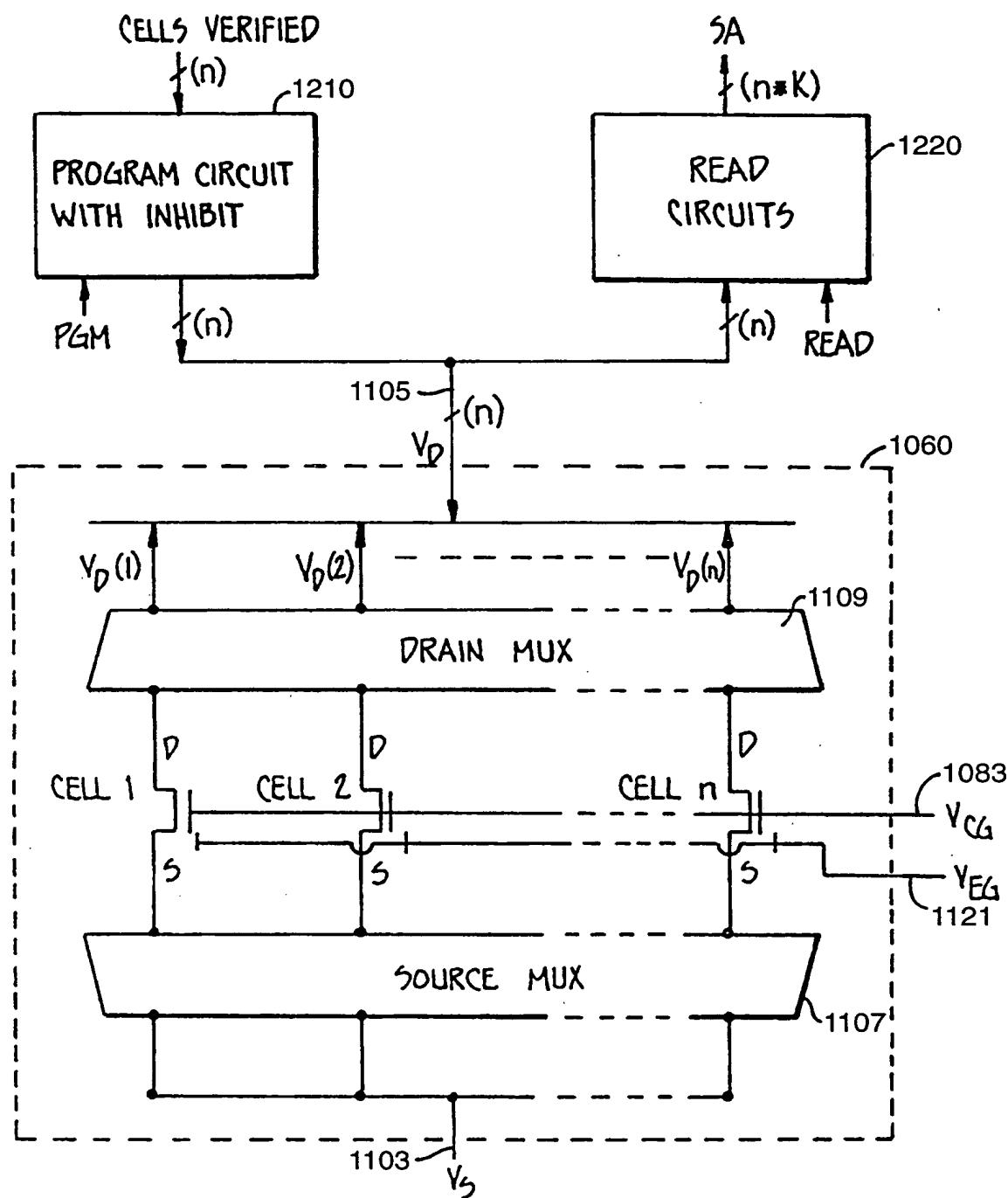


FIG._21C

APPROVED BY DRAFTSMAN	O.G. FIG.	
	CLASS	SUBCLASS

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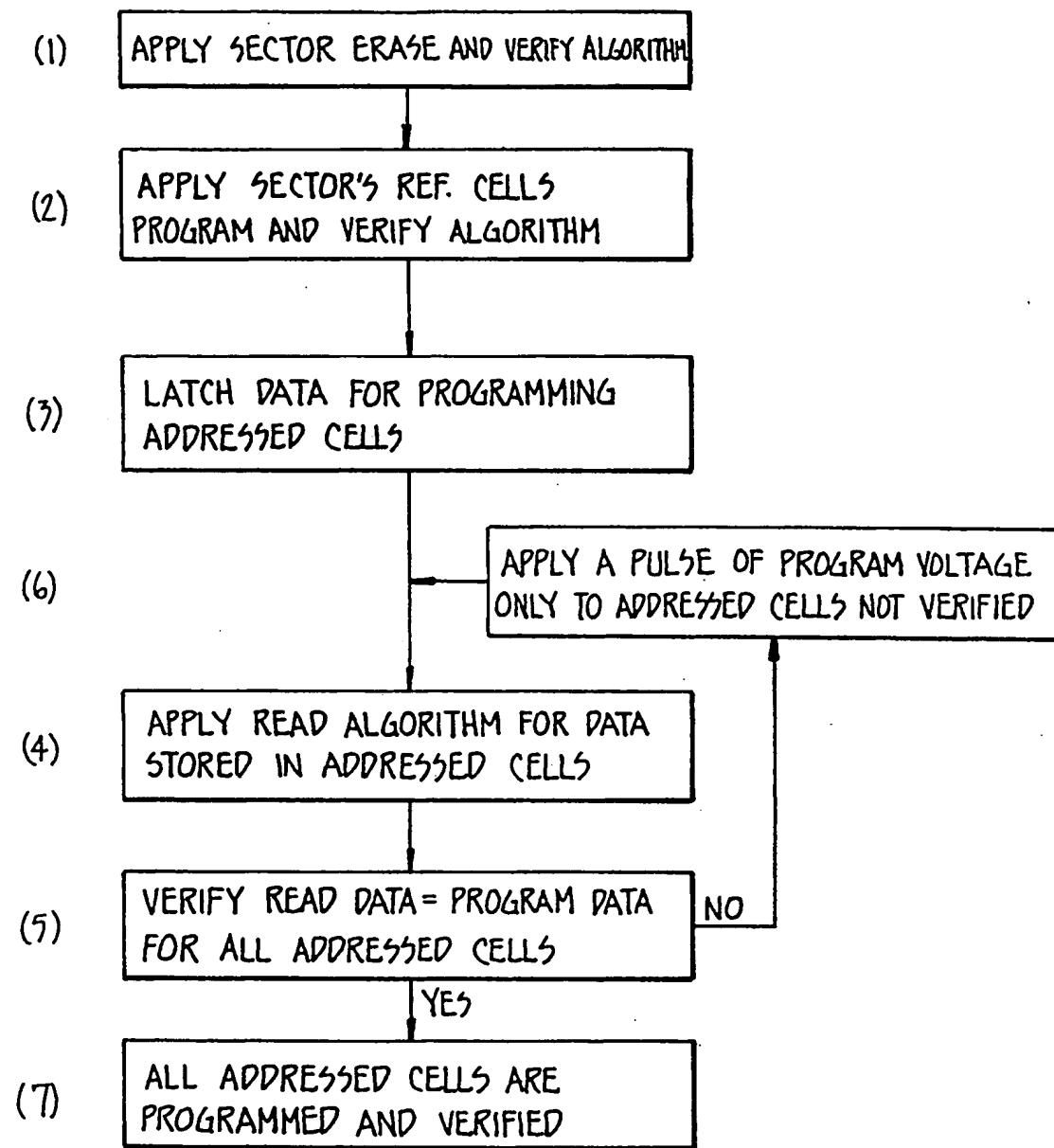


READ/PROGRAM DATA PATHS FOR n CELLS IN PARALLEL

FIG._22

APPROVED BY DRAFTSMAN	O.G. FIG.
	CLASS SUBCLASS

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PROGRAM ALGORITHM

FIG._23

APPROVED BY DRAFTSMAN	O.G. FIG. CLASS	SUBCLASS
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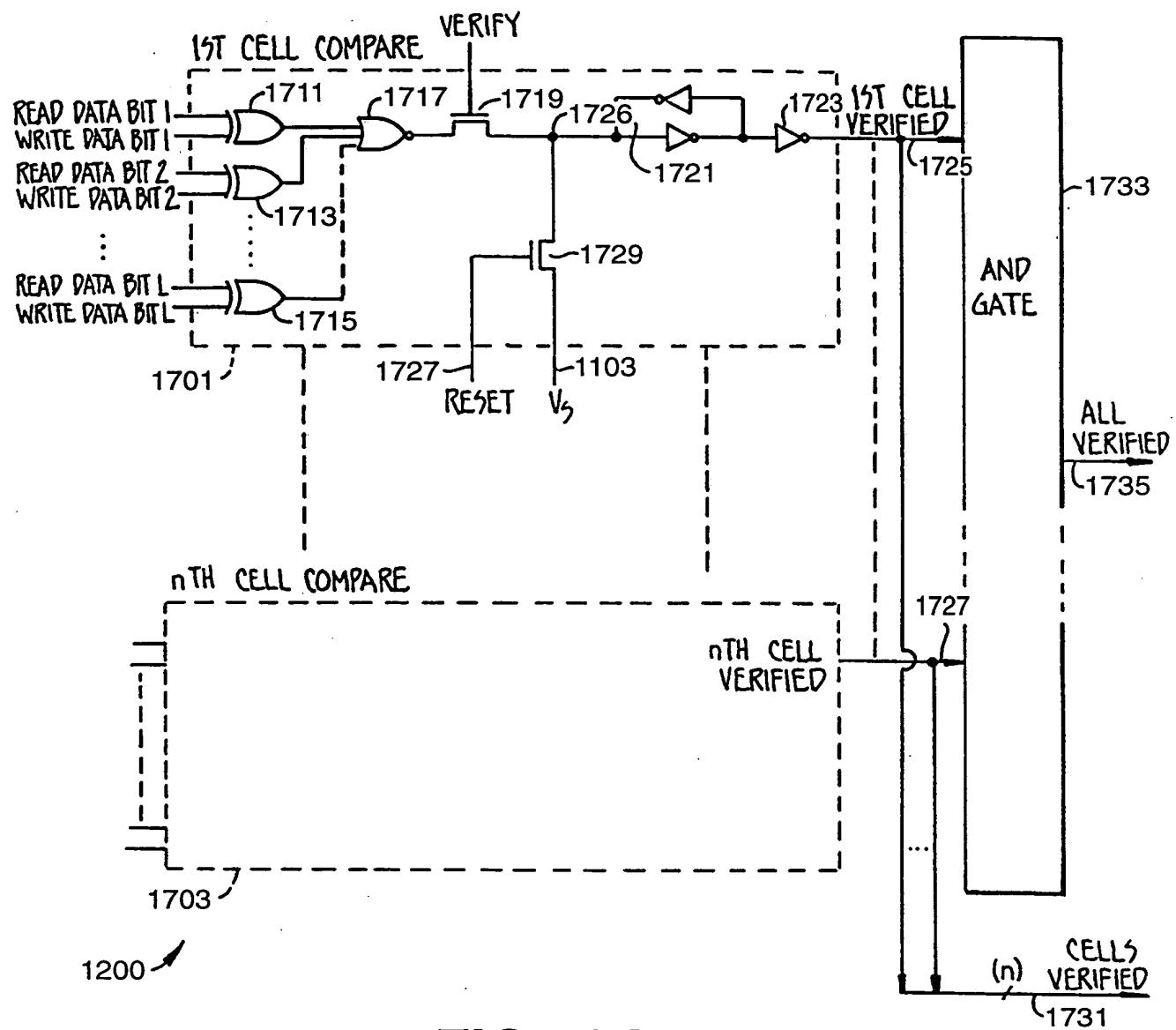


FIG._24

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

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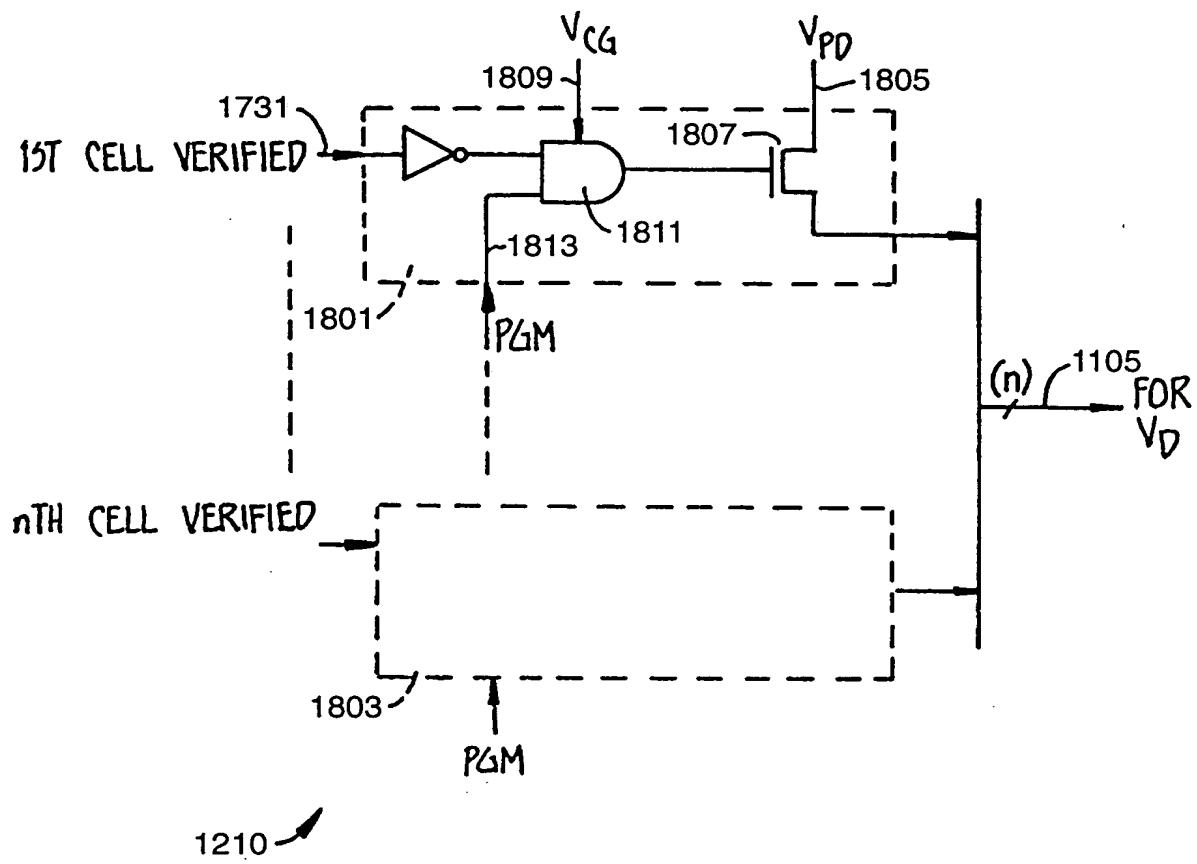


FIG._25

APPROVED BY DRAFTSMAN	O.G. FIG. CLASS	SUBCLASS
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	SELECTED CONTROL GATE V_{CG}	DRAIN V_D	SOURCE V_S	ERASE GATE V_{EG}
READ	V_{PG}	V_{REF}	V_{SS}	V_E
PROGRAM	V_{PG}	V_{PD}	V_{SS}	V_E
PROGRAM VERIFY	V_{PG}	V_{REF}	V_{SS}	V_E
ERASE	V_{PG}	V_{REF}	V_{SS}	V_E
ERASE VERIFY	V_{PG}	V_{REF}	V_{SS}	V_E

TABLE 1

FIG._26

(TYPICAL) VALUES	READ	PROGRAM	PROGRAM VERIFY	ERASE	ERASE VERIFY
V_{PG}	V_{CC}	12V	$V_{CC} + \delta V$	V_{CC}	$V_{CC} - \delta V$
V_{CC}	5V	5V	5V	5V	5V
V_{PD}	V_{SS}	8V	8V	V_{SS}	V_{SS}
V_E	V_{SS}	V_{SS}	V_{SS}	20V	V_{SS}
UNSELECTED CONTROL GATE	V_{SS}	V_{SS}	V_{SS}	V_{SS}	V_{SS}
UNSELECTED BIT LINE	V_{REF}	V_{REF}	V_{REF}	V_{REF}	V_{REF}

$$V_{SS} = 0V, \quad V_{REF} = 1.5V, \quad \delta V = 0.5V - 1V$$

TABLE 2

FIG._27